THE APPROVAL OF FIRESTOP CONTRACTORS
APPROVAL STANDARD 4991

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TODAY’S PRESENTATION

• Why FM Approvals?
• What is the program all about?
• What is the status of the program today?
Why Should I Partner With FM Approvals?

- FM Approvals is a Nationally Recognized Testing Laboratory (NRTL) focused solely on certifying products and services that are designed to help prevent losses and/or minimize losses.

You are also partnering with FM Global
Why Partner with FM Approvals?

FM Approvals

- 200+ employees, Offices worldwide
- Focused solely on Approving products and services that promote Property Loss Prevention
- Develops and publishes Approval Standards
- 50,000+ products and Services Approved
- Publish on-line in Approval Guide and RoofNav
Who is FM Global?

Property Insurance Company

- 175+ year old company
- Commercial & Industrial Properties
- Headquartered in USA
- Typical policy coverage
  - Fire and Extended Coverage
  - Boiler and Machinery
  - Business Interruption
• 1,800+ Engineers
• Insure facilities globally
• 200+ countries
What do FM Global Engineers do?

Perform inspections of FM Global insured locations to identify opportunities to reduce the risk of property loss and business interruption.

Recommend the use of FM Approved products and services that can reduce or eliminate the risk of Property Loss.
What can FM Approvals do for you?

- **Access to Markets.**
  - Products and services accepted by end users and local regulators.

- **A Competitive Advantage.**
  - A cut above the competition.
  - A marketing differentiation.
  - Opportunities

- **Do We Bring Leads to Approved Contractor’s?**
  - No
WHAT IS THE PROGRAM ABOUT?

• CO-OPERATIVE EFFORT FM APPROVALS
  AND FIRESTOP CONTRACTORS
  INTERNATIONAL ASSOCIATION
• YEAR 2000
PURPOSE

• IMPROVE THE PERFORMANCE & INSTALLATION OF FIRESTOP SYSTEMS AND COMPONENTS

• ACCOMPLISHED BY EXAMINING & QUALIFYING CONTRACTORS INVOLVED IN THEIR INSTALLATION
FIRESTOP SYSTEMS

- DESIGNED TO PROTECT OPENINGS IN:
  - WALLS
  - FLOORS
  - CONSTRUCTION JOINTS
  - FLOOR/WALL SLAB EDGE CONDITIONS
FIRESTOP SYSTEMS

• ONLY PRODUCTS SHOWN IN PUBLISHED LISTINGS
• INSTALLED PER MANUFACTURER’S INSTRUCTIONS & INDUSTRY PRACTICES
FIRESTOP SYSTEMS

- ENTIRE SYSTEM IN JEOPARDY IF ANY COMPONENT IS
  - OMITTED
  - IMPROPERLY INSTALLED
  - UNAUTHORIZED SUBSTITUTION OF COMPONENTS
APPROVAL STANDARD REQUIREMENTS

• MUST EMPLOY AT LEAST ONE (1) DESIGNATED RESPONSIBLE PERSON (DRI)
  – DEMONSTRATED ABILITY TO UNDERSTAND
    • APPROVAL STANDARD REQUIREMENTS
    • FCIA MANUAL OF PRACTICE (MOP)
APPROVAL STANDARD REQUIREMENTS

• WRITTEN QUALITY CONTROL MANUAL
• SUCCESSFUL AUDITS
  – OFFICE
  – JOB-SITE
APPROVAL STANDARD REQUIREMENTS

• MUST PASS TWO (2) WRITTEN EXAMS

• MINIMUM SCORE OF 80% ON EACH EXAM
  – EXAM 1 GENERAL INFORMATION
  – EXAM 2 DESIGN SELECTION
APPROVAL STANDARD REQUIREMENTS

• MAINTAIN APPROVAL
  – CONTINUE TO EMPLOY A DRI
  – SUCCESSFUL JOB-SITE AND OFFICE QUALITY CONTROL AUDITS EACH YEAR
  – PASS A WRITTEN RE-EXAM EVERY THREE (3) YEARS
  – OBTAIN 6 CEUs EVERY THREE (3) YEARS
WRITTEN EXAMINATION TOPICS

• KNOWLEDGE OF
  – CONSTRUCTION MATERIALS
  – LISTING AGENCIES & LISTED SYSTEMS
  – T, F AND L RATINGS
  – AUTHORITIES HAVING JURISDICTION
  – SPECIFICATIONS, ESTIMATING & BIDDING
  – NON-CONFORMANCES
WRITTEN EXAMINATION TOPICS

• KNOWLEDGE OF
  – TERMINOLOGY
  – HOURLY RATINGS
  – TYPES OF SYSTEMS
  – DEFINITIONS
  – BUILDING CODES
  – QUALITY CONTROL
WRITTEN EXAMINATION TOPICS

• CONTINUING EDUCATION REQUIREMENTS
• APPROVAL MARKINGS
• FIRE RATED SYSTEM SELECTION
• ENGINEERING JUDGEMENTS
Example Questions

- Which of the following is not considered to be an independent testing and certification agency?
  - a) NFPA
  - b) UL
  - c) FM Approvals
  - d) ULC
Example Question

• To properly select an appropriate design for an insulated metallic pipe penetrant system, the following must be considered.
  • a) the insulation material type
  • b) the insulation thickness
  • c) neither a or b
  • d) both a and b
Example Problem

- The concrete wall is 4 ½ inches thick. The opening is 15 inches x 20 inches. The penetrants consist of one (1) nominal 4 inch diameter PVC pipe and one (1) nominal 8 inch diameter schedule 40 steel pipe. The penetrants are equally spaced within the opening and meet all annular space and distance requirements between penetrants and the edge of the opening. Glass fiber insulation, 1 ½ inch thick, has been provided on the steel pipe. The maximum hourly rating of the assembly is
  - a) ½ hour
  - b) 1 ½ hours
  - c) 2 hours
  - d) The installation does not meet the criteria and this design can not be used
  - e) 1 hour

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FIRE STOP DESIGN 439
Rating – ½, 1 ½ or 2 HR

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1. FLOOR OR WALL ASSEMBLY. Min 4½ in. (114 mm) thick lightweight or normal weight concrete floor or wall assembly. Mirc area of opening not to exceed 600 sq ft (55.43 m²), max dimension not to exceed 30 in. (762 mm).

2. PENETRANTS. Various cable and piping penetrants (see below) are offset within the opening. All penetrants are to be rigidly supported on both sides of the assembly. The annular space between the outer tube penetrant and the assembly is a point contact. The annular space between the outer penetrant and the assembly is a minimum of 5 in. (15 cm).
   - a. Mix of one cable bundle containing the following number and type of cables:
      1. 7 - 720 No. 12 AWG power cables with PVC jacket.
      2. 2 - 200 No. 24 AWG telephone cables with PVC jacket.
      3. 2 - 24 gauge silver colored flat wire cables.
      4. 2 - 200 No. 12 AWG metal clad cables.
   - b. A mix of one 4 in. (102 mm) nominal diameter PVC plastic pipe. Two layers of CP545 Wrap Strip, 2 in. (51 mm) wide, is wrapped around the pipe and secured with tape.
   - c. A mix of one 2 in. (51 mm) nominal diameter copper tube with 1½ in. (38 mm) thickness AS/FPVC pipe insulation. One layer of CP545 Wrap Strip, 2 in. (51 mm) wide, is wrapped around the pipe insulation and secured with tape.
   - d. A mix of one 4 in. (102 mm) nominal diameter copper tube.
   - e. A mix of one 3 in. (76 mm) nominal diameter steel pipe, schedule 40, with 1½ in. (38 mm) thickness glass fiber pipe insulation.
   - f. A mix of one 2 in. (51 mm) nominal diameter TEK cable.

Some or all of the above penetrants may be incorporated into the opening. The hourly rating of the system is dependant on the selected penetrant as described in the table below.

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<th>Penetrant</th>
<th>Monthly Rating</th>
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<td>150</td>
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3. FIRESTOP COMPONENTS.
   - a. Fill material. A nominal ¾ in. (8.4 mm) thick by 2 in. (51 mm) wide strip of fill material is wrapped continuously around the circumference of the PVC plastic pipe (Item #47) and held in place with backing tape. A second layer of nominal ¾ in. (8.4 mm) thick by 2 in. (51 mm) wide strip of fill material is wrapped continuously around the circumference of the PVC plastic pipe (Item #47) and held in place with crimping tape such that the fill material is double-plied. A nominal 1½ in. (38 mm) wide by 2 in. (51 mm) nominal diameter copper tube with 1½ in. (38 mm) thickness AS/FPVC pipe insulation (Item #46) is held in place with crimping tape. The fill material is installed flush with each side of the wall assembly.

CP 545 Wrap Strip.
   - b. Fill MATERIAL. Foam material is installed within the voids between the penetrants on both sides of the floor or wall assembly to a min depth of 5 in. (127 mm), extending ½ in. (13 mm) above the finish surface or both surfaces of a wall assembly.

CP528 Firestop Foam.
EXAMINATION RESULTS

- 1st Exams – November 2000
- 53 People took the exam
- Minimum score of 80% on each of two (2) exams
- Only 39 people passed both exams
- Still today – only 2 out of 3 contractors pass both tests on 1st try
Growth of the program

- **1st Exams** – November 2000  Boston, MA
- Approval Guide  No. of locations  No. of DRIs

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<th>Year</th>
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<td>118</td>
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<td>2012</td>
<td>100</td>
<td>148</td>
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FREQUENTLY ASKED QUESTIONS

• Do I have to belong to the FCIA?
  
  Answer – No, but we encourage it. They are a great resource and can help you with things that I can not help you with – QA Manual, etc.

• Do I have to install all types of firestopping?
  
  Answer – No but the written exams will cover all types of firestopping
FREQUENTLY ASKED QUESTIONS

I’m not a contractor but I am an inspector. Can I take the DRI exams?

Answer: Yes! You will technically not be a DRI but you will receive a letter stating that you passed the test (if that happens to be true!)

ANY OTHER QUESTIONS?
WHO DO I CONTACT?

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